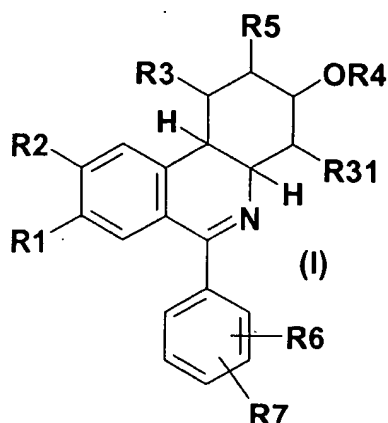


Patent Claims

1. Compounds of the formula I,



in which

R1 is hydroxyl, 1-4C-alkoxy, 3-7C-cycloalkoxy, 3-7C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-4C-alkoxy,

R2 is hydroxyl, 1-4C-alkoxy, 3-7C-cycloalkoxy, 3-7C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-4C-alkoxy,

or in which

R1 and R2 together are a 1-2C-alkylenedioxy group,

R3 is hydrogen or 1-4C-alkyl,

R31 is hydrogen or 1-4C-alkyl,

R4 is hydrogen, 1-4C-alkyl, completely or predominantly fluorine-substituted 1-4C-alkyl, 1-4C-alkoxy-1-4C-alkyl, hydroxy-2-4C-alkyl or 1-7C-alkylcarbonyl,

R5 is hydrogen or 1-4C-alkyl,

R6 is hydrogen, 1-4C-alkyl, trifluoromethyl, 1-4C-alkoxy, completely or predominantly fluorine-substituted 1-4C-alkoxy, 3-7C-cycloalkoxy, 3-7C-cycloalkylmethoxy, halogen, nitro, cyano, hydroxyl, 1-4C-alkylcarbonyloxy, amino, mono- or di-1-4C-alkylamino, phenyl, phenyl-1-4C-alkyl, 1-4C-alkylcarbonylamino, phenoxy or C(O)OR61, wherein

R61 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl or 3-7C-cycloalkylmethyl,

R7 is hydrogen, 1-4C-alkyl, hydroxyl, halogen, 1-4C-alkoxy, completely or predominantly fluorine-substituted 1-4C-alkoxy, 3-7C-cycloalkoxy, 3-7C-cycloalkylmethoxy or C(O)OR61,

and the salts, the N-oxides and the salts of the N-oxides of these compounds.

2. Compounds of the formula I as claimed in claim 1, in which

R1 is 1-2C-alkoxy, 3-5C-cycloalkoxy, 3-5C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-2C-alkoxy,

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- R2 is 1-2C-alkoxy, 3-5C-cycloalkoxy, 3-5C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-2C-alkoxy,
R3 is hydrogen,
R31 is hydrogen,
R4 is hydrogen, 1-4C-alkyl, completely or predominantly fluorine-substituted 1-2C-alkyl, 1-2C-alkoxy-1-2C-alkyl, 2-hydroxyethyl or 1-7C-alkylcarbonyl,
R5 is hydrogen,
R6 is hydrogen, 1-4C-alkyl, 1-4C-alkoxy, completely or predominantly fluorine substituted 1-2C-alkoxy, 3-7C-cycloalkoxy, 3-7C-cycloalkylmethoxy, halogen, nitro, amino, mono- or di-1-4C-alkylamino, 1-4C-alkylcarbonylamino or C(O)OR₆₁,

wherein

- R₆₁ is hydrogen, 1-4C-alkyl, 3-5C-cycloalkyl or 3-5C-cycloalkylmethyl,
R7 is hydrogen, 1-4C-alkyl, halogen, 1-4C-alkoxy, completely or predominantly fluorine-substituted 1-2C-alkoxy, 3-7C-cycloalkoxy or 3-7C-cycloalkylmethoxy,

and the salts, the N-oxides and the salts of the N-oxides of these compounds.

3. Compounds of the formula I as claimed in claim 1, in which

- R1 is 1-2C-alkoxy, 3-5C-cycloalkoxy, 3-5C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-2C-alkoxy,
R2 is 1-2C-alkoxy, 3-5C-cycloalkoxy, 3-5C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-2C-alkoxy,
R3 is hydrogen,
R31 is hydrogen,
R4 is hydrogen, 1-4C-alkyl, 1-2C-alkoxy-2-4C-alkyl or 1-7C-alkylcarbonyl,
R5 is hydrogen,
R6 is 1-4C-alkyl, 1-4C-alkoxy, completely or predominantly fluorine-substituted 1-4C-alkoxy, 3-7C-cycloalkylmethoxy, halogen, nitro, cyano, hydroxyl, 1-4C-alkylcarbonyloxy, mono- or di-1-4C-alkylamino, 1-4C-alkylcarbonylamino, phenoxy or C(O)OR₆₁, wherein
R₆₁ is hydrogen or 1-7C-alkyl,
R7 is hydrogen, halogen, 1-4C-alkoxy, completely or predominantly fluorine-substituted 1-4C-alkoxy or 3-7C-cycloalkylmethoxy,

and the salts, the N-oxides and the salts of the N-oxides of these compounds.

4. Compounds of the formula I as claimed in claim 1 or 3, in which

- R1 is 1-2C-alkoxy or completely or predominantly fluorine-substituted 1-2C-alkoxy,
R2 is 1-2C-alkoxy or completely or predominantly fluorine-substituted 1-2C-alkoxy,
R3 is hydrogen,
R31 is hydrogen,
R4 is hydrogen, 1-4C-alkyl, 1-2C-alkoxyethyl or 1-7C-alkylcarbonyl,

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- R5 is hydrogen,
R6 is 1-4C-alkyl, 1-4C-alkoxy, completely or predominantly fluorine-substituted 1-4C-alkoxy, 3-7C-cycloalkylmethoxy, halogen, nitro, cyano, hydroxyl, 1-4C-alkylcarbonyloxy, mono- or di-1-4C-alkylamino, 1-4C-alkylcarbonylamino, phenoxy or C(O)OR₆₁, wherein
R₆₁ is hydrogen or 1-7C-alkyl,
R7 is hydrogen, halogen, 1-4C-alkoxy, completely or predominantly fluorine-substituted 1-4C-alkoxy or 3-7C-cycloalkylmethoxy,
and the salts, the N-oxides and the salts of the N-oxides of these compounds.

5. Compounds of the formula I as claimed in any of the claims 1, 3 or 4, in which

- R1 is methoxy or difluoromethoxy,
R2 is methoxy, difluoromethoxy or ethoxy,
R3 is hydrogen,
R₃₁ is hydrogen,
R4 is hydrogen or acetyl,
R5 is hydrogen,
R6 is cyano or cyclopropylmethoxy,
R7 is hydrogen or cyclopropylmethoxy,

and the salts, the N-oxides and the salts of the N-oxides of these compounds.

6. Compounds of the formula I as claimed in any of the claims 1, 3, 4 or 5, in which

- R1 is methoxy,
R2 is methoxy,
R3 is hydrogen,
R₃₁ is hydrogen,
R4 is hydrogen or acetyl,
R5 is hydrogen,
R6 is cyano or cyclopropylmethoxy,
R7 is hydrogen or cyclopropylmethoxy,

and the salts, the N-oxides and the salts of the N-oxides of these compounds.

7. Compounds of the formula I as claimed in any of the preceding claims, in which

- R1 is methoxy,
R2 is methoxy,
R3 is hydrogen,
R₃₁ is hydrogen,
R4 is hydrogen or acetyl,
R5 is hydrogen,
R6 is cyclopropylmethoxy,

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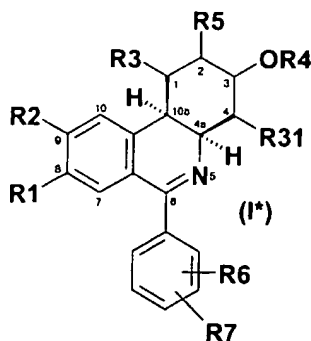
R7 is cyclopropylmethoxy,

and the salts, the N-oxides and the salts of the N-oxides of these compounds.

8. Compounds as claimed in claim 1 selected from the group consisting of
- (±)-acetic acid (3RS,4aRS,10bRS)-6-(3,4-bis-cyclopropylmethoxyphenyl)-8,9-dimethoxy-(1,2,3,4,4a,10b)-hexahydrophenanthridin-3-yl ester,
 - (±)-acetic acid (3SR,4aRS,10bRS)-6-(3,4-bis-cyclopropylmethoxyphenyl)-8,9-dimethoxy-(1,2,3,4,4a,10b)-hexahydrophenanthridin-3-yl ester,
 - (±)-(3RS,4aRS,10bRS)-6-(3,4-bis-cyclopropylmethoxyphenyl)-8,9-dimethoxy-(1,2,3,4,4a,10b)-hexahydrophenanthridin-3-ol,
 - (±)-(3SR,4aRS,10bRS)-6-(3,4-bis-cyclopropylmethoxyphenyl)-8,9-dimethoxy-1,2,3,4,4a,10b-hexahydrophenanthridin-3-ol,
 - (±)-acetic acid (3SR,4aRS,10bRS)-6-(4-cyanophenyl)-8,9-dimethoxy-(1,2,3,4,4a,10b)-hexahydrophenanthridin-3-yl ester, and
 - (±)-4-((3SR,4aRS,10bRS)-3-hydroxy-8,9-dimethoxy-(1,2,3,4,4a,10b)-hexahydrophenanthridin-6-yl)-benzonitrile,
- and the salts, the N-oxides and the salts of the N-oxides of these compounds.

9. Compounds of the formula I according to any of the claims 1 to 7, in which the hydrogen atoms in positions 4a and 10b are in the cis position relative to one another, and the salts, the N-oxides and the salts of the N-oxides of these compounds.

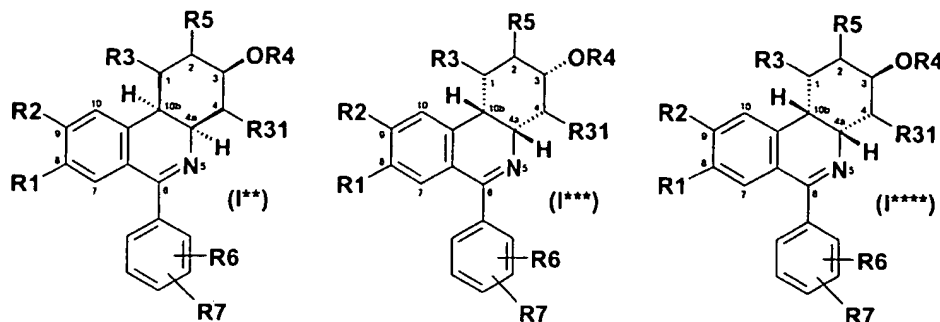
10. Compounds of the formula I according to any of the claims 1 to 7, which have with respect to the positions 4a and 10b the configuration shown in the formula I*:



and the salts, the N-oxides and the salts of the N-oxides of these compounds.

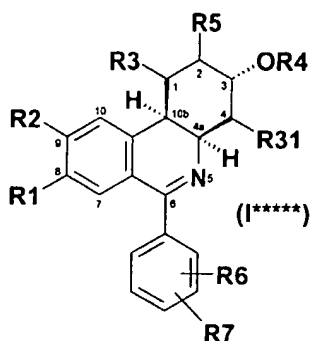
11. Compounds of the formula I according to any of the claims 1 to 7, which have with respect to the positions 3, 4a and 10b the configuration shown either in formula I**, I*** or I****:

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and the salts, the N-oxides and the salts of the N-oxides of these compounds.

12. Compounds of the formula I according to any of the claims 1 to 7, which have with respect to the positions 3, 4a and 10b the configuration shown in formula I*****:



and the salts, the N-oxides and the salts of the N-oxides of these compounds.

13. Compounds of the formula I as claimed in claim 1 for use in the treatment of diseases.
14. A pharmaceutical composition comprising one or more compounds of the formula I as claimed in claim 1 together with customary pharmaceutical excipients and/or vehicles.
15. The use of compounds of the formula I as claimed in claim 1 for the production of pharmaceutical compositions for treating respiratory disorders and/or dermatoses.
16. The use of compounds of the formula I as claimed in claim 1 for the production of pharmaceutical compositions for treating PDE-mediated disorders.
17. A method for treating illnesses in a patient comprising administering to said patient a therapeutically effective amount of a compound of the formula I as claimed in claim 1.

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18. A method for treating airway disorders in a patient comprising administering to said patient a therapeutically effective amount of a compound of the formula I as claimed in claim 1.